

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1-42 (cancelled).

43. (Currently Amended) An improvised A membrane-based device for speedier rapidly and effective concentrating [[of]] an aqueous solution, the device comprising:

- (a) a solution container for containing herbal extracts;
- (b) a permeate solution container in fluid connection with the solution container and separated therefrom by a filter vessel and a diaphragm type pressure pump, through which extract wherein a solution from the solution container enters into a the filter vessel to remove suspended particle particles from feed extract the solution from the solution container prior to entering the pressure pump;

said filter vessel having:

- (b1) an air bleeding valve to remove any trapped air in the system filter;
- (b2) a fabric filter for clearing the solution;
- (c) a membrane module in fluid connection with the filter container for receiving the cleared clarified solution from the fabric filter through the membrane module wherein the permeate is separated and the concentrate is recycled to the extract solution container;

said membrane module comprising a plastic body housing the membrane having,

- (c1) an inlet connected to the filter vessel for introducing the clear solution; a concentrate outlet for recycling the extract to the extract-solution container;
- (c2) a permeate outlet connected to the permeate solution container for sending the water permeate to the permeate solution container;
- (c3) a rubber 'O' ring seal to separate the permeate from the concentrated extract at the outlets of the module; and

(c4) a by pass seal for allowing the extract solution to pass through the membrane;

wherein the membrane module have has a length to diameter in-the-ratio of about 6 to 1 and over all thickness ranging between 130 to 170 microns, [[and]] wherein said module comprises a spiral thin film composite membrane allowing water to pass while retaining other components, and the solution to circulate in the system device [[:]] and wherein the membrane module is adapted to be fluidly connected with [[d]] a water reservoir and an air compressor being in fluid communication with the membrane module;

the device further comprising:

six solenoid valves which are configured and controlled so as to control fluid communication with the water reservoir and the air compressor and the membrane module, and to control the direction of [[the]] flow of permeate, concentrated extract, water and compressed air respectively during [[the]] concentrate, drain and wash modes, respectively; and

a back pressure regulator associated with at least one of the six solenoid valves for relieving back pressure in excess of a predetermined limit.

44. (Currently Amended) The device as claimed in claim 43, wherein the device maintains stability of the solution by functioning at room temperature, preferably about 25°C.

45. (Previously Presented) The device as claimed in claim 43, wherein the device concentrates the aqueous solution without frothing.

46. (Previously Presented) The device as claimed in claim 43, wherein the concentrate retains all constituents of the solution.

47. (Previously Presented) The device as claimed in claim 43, wherein the solution container is a vertical container or a reservoir for continuous supply of feed.

48. (Previously Presented) The device as claimed in claim 43, wherein the permeate container with provided with an outlet valve continuously removing water.

49. (Currently Amended) The device as claimed in claim 43, wherein the filter vessel coupled with the air bleeding valve to remove suspended particles and trapped air is configured to allow clear solution to flow into the membrane module and ~~for preventing~~ to prevent froth formation respectively.

50. (Currently Amended) The device as claimed in claim 43, wherein the solenoid valves [[helps]] are configured for changing [[the]] a flow path of aqueous solution/ water during the drain/ wash mode for operation.

51. (Previously Presented) The device as claimed in claim 43, wherein the diaphragm type pressure pump is installed to attain adequate pressure for continuous flow of aqueous solution.

52. (Currently Amended) The device as claimed in claim 43, wherein the control panel coupled with an ON and OFF switch [[helps]] is configured for concentrating the aqueous solution, and continuously washing the membrane for optimum life.

53. (Previously Presented) The device as claimed in claim 43, wherein the aqueous solution container has length and diameter in the ratio of about 4:1.

54. (Previously Presented) The device as claimed in claim 43, wherein the permeate container has length and diameter in the ratio of about 4:1.

55. (Cancelled)

56. (Withdrawn) An improved process of speedier and effective concentrating of the aqueous solution up to about 95% using a membrane-based device, said method comprising the steps of:

- a. feeding the aqueous solution into the aqueous solution container,
- b. filtering the fed solution to remove suspended particles,
- c. passing the resultant filtered solution into a membrane module having length to diameter ration of about 6 to 1 and over all thickness ranging between 130 to 170 microns;

- d. segregating permeate and concentrate in the membrane module, and
- e. recycling the concentrate multiple times to obtain the highly concentrated final concentrate.

57. (Withdrawn) The process as claimed in claim 56, wherein the process is conducted at room temperature, preferably about 25°C to maintain stability of the solution.

58. (Withdrawn) The process as claimed in claim 56, wherein the concentrate of the aqueous solution is without frothing.

59. (Withdrawn) The process as claimed in claim 56, wherein the concentrate retains all constituents of the solution.

60. (Withdrawn) The process as claimed in claim 56, wherein the vertical container works as a reservoir for continuous supply of feed.

61. (Withdrawn) The process as claimed in claim 56, wherein the permeate container with outlet valve continuously removes water.

62. (Withdrawn) The process as claimed in claim 56, wherein the filter vessel coupled with air bleeding valve enables removal of suspended particles and trapped air, respectively, thus, allows only clear solution to flow into the membrane module.

63. (Withdrawn) The process as claimed in claim 56, wherein the solenoid valves helps changing the path of aqueous solution/ water during the drain/ wash mode for operation.

64. (Withdrawn) The process as claimed in claim 56, wherein the pressure pump enables adequate pressure to be attained for continuous flow of aqueous solution.

65. (Withdrawn) The process as claimed in claim 56, wherein the control panel coupled with ON and OFF switch helps concentrating the aqueous solution, and continuously washing the membrane for optimum life.

66. (Withdrawn) The process as claimed in claim 56, wherein the aqueous solution container has length and diameter in the ratio of about 4:1.

67. (Withdrawn) The process as claimed in claim 56, wherein the permeate container has length and diameter in the ratio of about 4:1.

68. (Withdrawn) The process as claimed in claim 56, wherein the solenoid valves controls the direction of the flow in modes selected from a group comprising concentrate mode, drain mode, and wash mode.

69. (Withdrawn) The process as claimed in claim 56, wherein the process eliminates the hold-up volume.

70. (Withdrawn) The process as claimed in claim 56, wherein the process minimizes the membrane fouling.

71. (Withdrawn) The process as claimed in claim 56, wherein the process prevents contamination of the solution.

72. (Currently Amended) The device as claimed in claim 43, wherein the solenoid valves are coupled with a control panel [[with]] and an ON and OFF switch for operating the device in the concentrate, drain and wash [[mode]] modes.

73. (Withdrawn) The process as claimed in claim 56, wherein the process further comprises steps of supplying the compressed air to the membrane module through the filter to pressurize the concentrate hold up in the membrane module.